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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/017,937	02/03/1998	STEPHEN D. JULSTROM	12078US01	9038

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07/17/2003

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EXAMINER

PENDLETON, BRIAN T

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 07/17/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/017,937

Applicant(s)

JULSTROM ET AL.

Examiner

Brian T. Pendleton

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 128-174 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 128-135, 145-152, 162-166 and 172-174 is/are allowed.
- 6) ☒ Claim(s) 136, 138, 139, 141-143, 153, 155, 156, 158-160 and 167-170 is/are rejected.
- 7) ☒ Claim(s) 137, 140, 144, 154, 157, 161 and 171 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 136, 153, 167 and 168 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. Yamamoto disclose a directional microphone system comprising microphones 1a, 1c; high pass filters 6a,6c; and summer 3 in figure 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 141 and 158 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. Yamamoto et al teach a microphone assembly comprising two microphones, high pass filters and a summer. The high pass filters limit adverse effects from amplitude and phase mismatches. Yamamoto et al do not teach generating an additional output signal having an extended low frequency response in comparison to the output signal from the summer. However, in an alternate embodiment, figure 14, Yamamoto et al disclose generating a directional signal with an extended low frequency response (low pass filter 4a). It would have been obvious to one of ordinary skill in the

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art at the time of invention to switch between the alternate embodiments for a specific output signal. The embodiment of figure 13 helped prevent noise from occurring the low frequency range, while the embodiment of figure 14 allowed low frequency signals to be produced. Depending on the needs of the user, either output could be useful, therefore one of ordinary skill would have been motivated to provide both in one apparatus. This modification would have incorporated a switch to select between the different outputs, which are generated by two non-patentable configurations and therefore obvious.

Claims 138, 139, 142, 143, 155, 156, 159, 160, 169, and 170 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al in view of Preves et al. Yamamoto et al do not disclose that the microphones and circuitry are housed in a case. Yamamoto et al disclose that the microphones are housed in the same case, but it is not explicitly taught by the circuitry is in the housing with the microphones. However, that feature was well known in the art, as evidenced by Preves et al, which houses microphones and circuitry. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the teaching of Preves et al and encase the circuitry of Yamamoto et al with the microphones. The benefit would have been space conservation. As to the feature of mounting the casing on a mounting side of an acoustical barrier, that is inherent.

Allowable Subject Matter

Claims 128-135, 145-152, 162-166 and 172-174 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose nor suggest a microphone assembly with at least two microphones, signal processing circuitry, a case for housing the two microphones and signal processing circuitry wherein the case is mounted on a mounting side of an acoustical barrier, the barrier being the interior surface of a passenger vehicle. These features are found in independent claims 128, 129, 134, 145, 146, 151, 162, 163, and 165. The signal processing circuitry claimed is to limit adverse effects on the microphone assembly output signal from amplitude and phase mismatches between the at least two microphones. In light of the specification and drawings, the signal processing circuitry is interpreted as the two high pass filters 111, 113 leading to a summer 119 for generating a pattern signal followed by a high pass filter 109. While Preves et al disclose a microphone assembly having two microphones and signal processing circuitry, the apparatus is not mounted on an acoustical barrier in the interior of a vehicle. Newly discovered reference Umebayashi discloses a signal transmission apparatus mounted on a steering wheel comprising microphones MC1 and MC2 and signal processing circuitry. However Umebayashi does not teach signal processing circuitry for limiting the amplitude and phase mismatches, instead the signals are modulated by circuit element 95. There was no motivation in Preves et al to mount the microphone taught in an interior of a vehicle per the teachings of Umebayashi since the microphone was used as part of a hearing aid. As a result, the claims and their dependents are allowed.

Claims 131, 148 and 172 each recite at least two microphones, signal processing circuitry, a case for housing the microphones and circuitry and at least two protective

screens located between an inner surface of the case and the at least two microphones. Besides not teaching the interpreted signal processing circuitry and microphone spacing (Applicant's specification page 6 lines 5-8 and page 18 line 24 – page 19 line 12), neither Preves et al or Umebayashi disclose nor suggest two protective screens. The claims and their dependents are allowed.

Claims 137, 140, 144, 154, 157, 161 and 171 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

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Brian Tyrone Pendleton

July 8, 2003



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